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EPI-LOG

Communicable Disease and Epidemiology News
Published continuously since 1961
Edited by Sherry Lipsky, PA-C, MPH

HEALTHY PEOPLE. HEALTHY COMMUNITIES

Public Health – Seattle & King County
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Seattle, WA 98104 - 4039

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IN THE DECEMBER 1999 ISSUE: VOL 39, NO. 12

WTO SURVEILLANCE

In accordance with recent recommendations from national public health and political leaders, Public Health – Seattle & King County (PHSKC) has been working throughout the past year to increase our community's preparedness for biological disasters including both biological terrorism and naturally occurring biological disasters. Naturally occurring biological disasters include events such as pandemic influenza, large outbreaks due to a host of communicable diseases, and outbreaks of newly emerging diseases such as the recent West Nile Virus encephalitis outbreak on the East Coast.

This fall, PHSKC began planning to identify the public health surveillance and response needs for the World Trade Organization (WTO) meetings to prepare for a potential bioterrorism event or naturally occurring communicable disease outbreak. As our planning process matured, it became clear that our traditional surveillance infrastructure was inadequate to allow optimal surveillance and response in this setting.

PHSKC worked collaboratively with Centers for Disease Control and Prevention (CDC) staff and colleagues from the Defense Advanced Research Projects Agency (the central research and development organization for the Department of Defense) on the design of a surveillance system that could be rapidly implemented yet functional and informative. The result was the WTO Enhanced Surveillance Project (ESP) implemented in collaboration with eight Seattle and King County acute care medical centers: Swedish Hospital, Virginia Mason Hospital, Providence Hospital, the University of Washington Hospital, Overlake Hospital, Northwest Hospital, Group Health Eastside, and Harborview. The ESP was put in place the week before the WTO conference and operated through December 11, 1999. On November 17, the PHSKC-CDC team offered a CME-approved educational conference on bioterrorism preparedness for emergency room physicians and infection control practitioners. The conference was co-sponsored by PHSKC, the American College of Emergency Physicians and the Infectious Disease Society of Washington.

The dedicated commitment to this project among the staff at each participating hospital was directly responsible for the success of the ESP. We had outstanding cooperation and collaboration from local emergency medicine and infection control professionals. More hospitals volunteered to participate in the ESP than we could accommodate; we set up a second tier of surveillance at five additional hospitals (Children's, Auburn Regional, Valley Medical, Highline Community, and Swedish-Ballard).

Once implemented, the ESP allowed us to monitor on an around-the-clock basis over 10,500 clinical visits to area emergency departments during the surveillance period surrounding the WTO conference. We were able to detect and rapidly investigate "critical" clinical syndromes such as sudden death and botulism-like illness as well as identify clusters of other illnesses compatible with potential exposure to agents of biowarfare or with naturally occurring communicable disease outbreaks. We were also able to monitor the selected clinical syndromes specifically among persons associated with the WTO conference.

The data that was rapidly available through the ESP proved very useful to Public Health staff both during and after the conference. The main advantage of the ESP was in providing the ability to continuously monitor the population for indicators of potential bioterrorism or naturally occurring disease outbreaks.

We are optimistic that this project will provide a framework for allowing us to improve our communicable disease surveillance and response infrastructure and facilitate our work towards developing new novel approaches to long term, ongoing communicable disease surveillance in our community.

BIOLOGIC AGENTS

The threat of biological terrorism has received increased attention from national political and public health leaders recently. Despite the hope that, with the right mix of policies, security measures and intelligence gathering, a major bioterrorism attack can be prevented, the history of conventional terrorism indicates otherwise. Unlike chemical agents, which typically lead to violent disease syndromes within minutes, diseases resulting from biological agents have incubation periods of days to weeks. They may also first manifest themselves in geographic areas far away from the site of exposure. Therefore, it will likely be a physician rather than a paramedic who is first faced with evidence of disease from a biological attack. This, the third article in Epi-Log on this topic, will begin to discuss biological agents that are thought to be the most likely to be used in a bioterrorist attack. In doing so, we hope to raise awareness among clinicians and increase the likelihood of these diseases being included in a differential diagnosis, recognized and reported. Although these diseases are rarely if ever seen in the U.S. today, accepted diagnostic and epidemiologic principles apply in aiding clinicians to identify them. If the illness is recognized quickly, appropriate therapy can often be initiated and the impact of a bioterrorist attack greatly reduced.

Anthrax is thought to be the most likely agent to be used in a bioterrorist event. Caused by the bacterium *Bacillus anthracis*, anthrax is primarily a zoonotic disease of herbivores. The spores of *B. anthracis* are extremely stable and may remain viable for many

years in soil and water from which they are ingested and cause disease in animals. In humans, anthrax presents as three distinct clinical syndromes depending on the route of exposure: cutaneous, inhalational and gastrointestinal. In the event of a bioterrorist attack, inhalational disease would be the most likely presentation after exposure to aerosolized anthrax spores.

The incubation period is usually 1 to 6 days, but can be as long as 60 days. Initial symptoms of fever, malaise, fatigue, cough and mild chest discomfort are followed in 24 to 72 hours by severe respiratory distress with dyspnea, diaphoresis, stridor and cyanosis. Shock and death occur within 24 to 36 hours after the onset of severe symptoms secondary to hemorrhagic mediastinitis and overwhelming sepsis. Physical findings are non-specific for diagnosis. A widened mediastinum may be seen on chest X-ray and is an important diagnostic clue, however pulmonary infiltrates are not seen. Pleural effusions are evident late in the disease in 50% of cases. The bacterium is detectable by Gram stain of the blood and by blood culture late in the course of illness. Microbiologists need to be alert to the possibility that a gram-positive rod in the blood may not represent a contaminant as is typically the case.

Nearly all inhalation anthrax cases in which treatment was begun after patients were significantly symptomatic have been fatal, regardless of treatment. Anthrax is not transmissible from person-to-person, so only standard precautions need to be followed. In the absence of information concerning antibiotic sensitivity, treatment should be instituted at the earliest signs of disease with IV ciprofloxacin (400 mg every 8-12 hours) or IV doxycycline (200 mg initially, followed by 100 mg every 12 hours). Supportive therapy for shock, fluid volume deficit and adequacy of airway may all be needed.

Other potential agents of bioterrorism will be discussed in future issues of Epi-Log. See the following web sites for more information on reporting protocols and other biological agents: www.metrokc.gov/health, www.bt.cdc.gov/protocols.asp, and www.bt.cdc.gov/bioagents.asp.

FLU ON THE RISE

The PHSKC influenza surveillance system has detected acute influenza among children and adults. Absenteeism of over 10% has been reported from several local schools in the first two weeks of December, and one confirmed nursing home outbreak has been reported. From mid-September through the week ending December 11th, all 20 influenza isolates identified at the PHSKC Laboratory have been influenza A (H3N2), a strain that is covered by this year's influenza vaccine. Statewide influenza A (H3N2) has been exclusively identified as well.

It is still advisable for persons at high risk of influenza-related complications to be vaccinated. In addition, health care providers may consider the use of amantadine or rimantidine in the prevention and treatment of influenza A. Treatment is especially recommended for high-risk patients, such as the elderly and infirmed. Rimantidine is less likely to cause dizziness or other neurologic effects and is more often preferred. Newly available neuramidase inhibitors, such as tamiflu and Relenza® may be considered as treatment options only; they have not been approved for use in the prevention of influenza. Please remind parents not to give aspirin to children who are suspected of having a viral illness, such as influenza.

Information for the general public is available on our CD 24-hour hotline and our web site. Health care provider information is available on the web at: http://www.cdc.gov/ncidod/diseases/flu/fluvirus.htm,http://www.relenza.com/, and http://www.tamiflu.com/.

Report: **(area code 206)**

AIDS	**296-4645**
Communicable Disease	**296-4774**
STDs	**731-3954**
Tuberculosis	**731-4579**
24-hr Report Line	**296-4782**
After hours	**682-7321**
Hotlines:	
CD Hotline	**296-4949**
HIV/STD Hotline	**205-STDS**

http://www.metrokc.gov/health/

REPORTED CASES OF SELECTED DISEASES SEATTLE-KING COUNTY 1999

	CASES REPORTED IN NOVEMBER		CASES REPORTED THROUGH NOVEMBER	
	1999	1998	1999	1998
VACCINE-PREVENTABLE DISEASES				
Mumps	0	0	1	2
Measles	0	0	1	1
Pertussis	10	7	448	147
Rubella	0	0	2	1
SEXUALLY TRANSMITTED DISEASES				
Syphilis	3	3	69	34
Gonorrhea	51	59	836	899
Chlamydial infections	376	229	3556	3171
Herpes, genital	40	43	595	592
Pelvic Inflammatory Disease	13	15	237	211
Syphilis, late	4	1	44	27
ENTERIC DISEASES				
Giardiasis	19	18	186	239
Salmonellosis	8	20	253	199
Shigellosis	6	5	58	79
Campylobacteriosis	21	13	260	211
E.coli O157:H7	4	1	43	29
HEPATITIS				
Hepatitis A	30	10	203	378
Hepatitis B	6	3	37	51
Hepatitis C/non-A, non-B	0	0	7	6
AIDS	19	9	201	216
TUBERCULOSIS	6	13	93	106
MENINGITIS/INVASIVE DISEASE				
Haemophilus influenzae	0	0	1	1
Meningococcal disease	0	1	20	14